

Sample Question Paper
Algebra (Maths-I)

Time : 2 hrs

Std. X

Marks : 40

Q.1. Solve any five from the following subquestions.

5

- i) Write an A.P. having first term 5.
- ii) If $t_n = n + 2$ then find t_{10}
- iii) Write the given equation in standard form as $ax^2 + bx + c = 0$
 $3y^2 = 8y + 5$
- iv) If one root of the equation $n^2 + kn = 0$ is (-4) then find the value of k .
- v) If $Dx = 3$, $Dy = 2$, $D = 6$ then find the value of x and y for the linear equations in two variable.
- vi) Write the sample space (S) when in a random experiment, two coins are tossed simultaneously.

Q.2 Solve any four from the following subquestions.

8

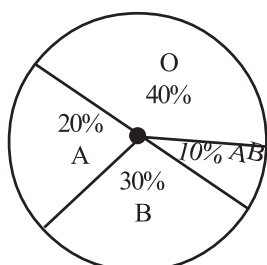
- i) Determine whether given sequence is an A.P.
9, 16, 23, 30,
- ii) Solve the given quadratic equation
 $y^2 - 4y - 1 = 0$
- iii) If $12x + 13y = 29$; $13x + 12y = 21$ then find the value of $(x + y)$ and $(x - y)$
- iv) Write two solutions for the equation
 $2x + y = 10$
- v) Write S, $n(S)$, B and $n(B)$ for the following random experiment : a die is thrown once' and event B is getting a prime number.
- vi) For a frequency distribution values of Mean and Median are 57.3 and 57.2 respectively. Find the Mode.

Q.3 Solve any three from the following subquestions.

9

- i) For an A.P. find S_{10} if $a = 5$ and $d = 3$.
- ii) If the roots of the quadratic equation are 6 and 5, then find that equation.
- iii) Sum of the two numbers is 97. If the larger number is divided by the smaller then the quotient is 7 and remainder is 1. Find the numbers.

- iv) If there are 15 tickets bearing numbers from 1 to 15 in a bag and one ticket is drawn at random, then find the probability that the ticket drawn bears an odd number.
- v) The following pie diagram shows the percentage of persons according to blood groups then answer the following :



- a) Find the measure of the central angle for each blood group.
- b) Find the total number of persons if there are 900 persons of blood group B.

Q.4 Solve any two from the following subquestions.

8

- i) Solve :
- $$\frac{2}{x} + \frac{6}{y} = 13; \quad \frac{3}{x} + \frac{4}{y} = 12.$$
- ii) Two digit numbers are formed from the digits 0, 1, 2, 3, 4. Where digits are not repeated. Find the probability that
- event A - the number formed is greater than 42.
 - event B - the number formed is multiple of 4.
- iii) The weight of coffee in 60 packets is given below. Find the Median weight of the coffee packet.

Weight in gms.	200-201	201-202	202-203	203-204	204-205	205-206
Number of packets	12	16	20	9	2	1

Q.5 Solve any two from the following subquestions.

10

- i) A sum of Rs. 1,300 is to be used to give 10 prizes to the students for their excellence. If each prize is Rs. 20 more than the preceding prize then find the value of tenth prize.
- ii) An express train takes 30 minutes less for a journey of 440 km, if its usual speed is increased by 8 km/hr Find its usual speed.

- iii) Draw Histogram and hence the frequency curve for the following frequency distribution of customers in a certain year at a departmental store in Mumbai.

Number of customers	50-100	100-150	150-200	200-250	Total
Number of days	90	98	138	40	366